FACE INVESTIGATION

SUBJECT: Office Assistant at Sod Farm Dies When Forklift Slides into Ditch and She is Pinned

SUMMARY:
A 28-year-old white female office assistant (the victim) at a sod farm died after being pinned under the tire of a forklift that had slipped into a manmade drainage ditch. The employer in this incident was a sod farm and landscaping business that hired seasonal workers during the spring, summer and fall for field work. The victim usually performed general office duties for the business, but had occasionally operated a forklift under supervision. The field workers primarily spoke Spanish, while the office assistant was only proficient in English. On the day of the incident, the victim was notified that a customer had arrived earlier than expected and was waiting to pick up a small load of sod. The farm owner (the farmer) and laborers who usually loaded the sod were working in the fields, about a half-mile from the office and could not be easily contacted. The victim drove a Case Model 586 E forklift to a stack of rolled sod near a flatbed truck parked on a path that ran alongside a water-filled ditch. She was apparently positioning the forklift to pick up a pallet of sod to load onto the truck when the forklift began to slip backwards into the ditch. Although the forklift was equipped with a rollover protection structure (ROPS) and seatbelts, the victim was not wearing the seatbelts at the time of the incident. The event was unwitnessed, but it appears she either fell or jumped from the forklift and was pinned underwater by a rear wheel of the forklift as it rolled into the ditch. The farmer and a laborer noticed that the forklift was no longer visible in the area of the truck and went to investigate. The laborer found the victim pinned underwater, and raised her head enough to reach air. The farmer called for emergency services from the truck phone. Emergency services arrived, and the forklift was pulled from the water by a tractor brought from a nearby field. After cardiopulmonary resuscitation was started, the victim was transported to a hospital, where she died five days later from anoxic brain injury. The Wisconsin FACE investigator concluded that, to prevent similar occurrences, employers should:

- **develop, implement and enforce a written safety program that includes, but is not limited to, completion of powered industrial truck training program before operation of a forklift.**

- **ensure that all workers wear seat belts on forklifts and other equipment that have rollover protective structures (ROPS)**

- **consider using personal mobile radios to communicate with workers in remote worksites**

- **ensure that employees are trained in first aid and cardiopulmonary resuscitation (CPR)**

In addition, employers of workers who are not fluent in English should:

- **ensure that all workers receive instructions on safe work practices in a manner that is clear, complete, and understandable to the employee.**

INTRODUCTION:
On August 11, 1995, a 28-year-old office assistant at a sod farm died of injuries she received after she jumped or was thrown from a forklift that slid into a ditch. The Wisconsin FACE field investigator learned of the incident

on August 14, 1995, from a newspaper article. The investigation was initiated on August 26, 1995, through contact with the sheriff's department. Additional followup included a site visit and employer interviews, coroner and sheriff's reports, and a report from the state climatologist. An OSHA inspector had visited the site but no report has been produced since the employer was not covered by OSHA jurisdiction due to its agricultural status.

The employer in this incident was a sod farm and landscaping company that had been in business for about 12 years. Each year, the sod farm owner employed two or three laborers for seasonal field work. The victim lived in the residence that also served as the office location for the sod farm, and provided part-time office management and secretarial services for the sod farm owner. She had worked at the farm for about seven years, occasionally helping the field workers with their tasks after receiving task-specific on-the-job training from the farm owner or laborers.

New employees received on-the-job training from the farmer, who included verbal instructions on workplace safety policies and procedures in the training. The farmer would verbally update the training as new equipment or procedures were implemented. There was no written safety program, nor forklift safety training program. It is unknown if any of the workers had received current, formal training in CPR. Although Spanish was the primary language of the field workers, they understood basic English conversation. The farmer could speak and understand verbal and written Spanish at a basic level.

INVESTIGATION:

The sod farm was in a rural area on flat terrain, with about 105 acres of land in sod production. Sod was sold on a retail basis, or used in the landscaping business operated by the farm owner. The farm office was in a group of buildings that included machine sheds and workshops for the farm and landscaping business. The buildings were near the town road, about one-half mile from the sod fields. Access to the fields was provided by a wide gravel path that ran alongside an unfenced ditch with a steep grade on its banks. A widened area of the path was used for loading pallets of sod from adjacent fields to a flatbed truck. The farmer and field operators used a Case Model 586 E forklift to lift sod pallets onto the truck. The forklift was equipped with a rollover protection structure (ROPS) and seatbelts and had large dual tires on the front, smaller dual tires and counterweights on the rear. A steering wheel and levers for forward and reverse and fork movements were located on a control panel in front of the operator's seat, while a throttle lever was on the left of the seat and a parking brake lever was on the right. Individual brakes for each set of wheels were controlled by pedals on the left and right sides of the floor, with the clutch lever extending from the left floor to the left side of the operator's seat. The levers, pedals and panel gauges were clearly labeled.

On the day of the incident, the farmer and the laborer were working in the fields at the end of the path. The weather was warm and dry, with a light wind. The victim was working in the office when she was contacted by a customer who arrived earlier than expected and was waiting to pick up a small load of sod. The victim was unable to contact the workers in the field without driving to the site where they were working, so she went to the area on the path where sod rolls were stacked. She started the forklift, and was apparently positioning the forklift to pick up a pallet of sod to load onto the truck when the forklift began to slip backwards into the ditch. The event was unwitnessed, but it appears she either fell or jumped from the forklift and was pinned underwater under a rear

wheel of the forklift as it rolled into the ditch. Before the incident, the farmer and the laborer had noticed the victim in the vicinity of the forklift so they went to investigate when it was no longer visible. They found the victim pinned underwater, and the laborer raised her head enough to reach air, although she was apparently not breathing. He attempted respiratory resuscitation while holding her head out of the water. Meanwhile, the farm owner called for emergency services from the truck phone. Emergency services arrived, and the forklift was pulled from the water by a tractor brought from a nearby field. CPR was started once she was on land. The victim was transported to a hospital by air ambulance, where she died five days later. The operation of the forklift brakes and shifting levers were tested by the sheriff's deputies, who found them in good working order. Seatbelt straps were looped around the frame on both sides of the seat.

CAUSE OF DEATH: The death certificate and coroner's report listed cause of death as anoxic brain injury due to fresh water drowning.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should develop, implement and enforce a written safety program that includes, but is not limited to, completion of powered industrial truck training program before operation of a forklift.

Discussion: Employers should evaluate tasks performed by workers; identify all potential hazards; and then develop, implement, and enforce written safe work procedures addressing these issues. The safety program should address recognition of hazardous conditions, and include specific training requirements for employees who operate forklifts. Employees should not be allowed to perform hazardous duties until they have demonstrated competency in those activities. The sod farm where this incident occurred did not have a written safety program, nor did it require powered truck training of employees who operated forklifts. The victim was an office assistant who had received only on-the-job instructions about driving a forklift. Although she had operated the forklift under supervision several times before the incident, a training program might have alerted her to the hazards of operating a weighted forklift near a steep slope, and to the need to wear seatbelts at all times. An OSHA standard that would require formal training and evaluation before an individual could operate a forklift was proposed as a rule on March 14, 1995.[1]

Recommendation #2: Employers should ensure that all workers wear seat belts on forklifts and other equipment that have rollover protective structures (ROPS).

Discussion: Death and serious injury that result when equipment overturns can be prevented by protecting the worker from serious consequences of a rollover. ROPS, which include roll-bar, frame, and roll-protective cab designs, provide a zone of protection for the operator. Seat belts must be used when operating a ROPS-equipped forklift or other equipment to ensure that the operator will remain securely in the protected zone.[2] In this incident, the forklift was equipped with a roll-frame and seatbelts for operator protection in the event of rollover. Although the forklift did not overturn, the victim either jumped or was thrown from the seat as it rolled into the ditch and was pinned underwater by a tire. The ASME/ANSI Safety Standard for Low Lift and High

Lift Trucks recommends an operator restraint device, system or enclosure for forklifts such as the one involved in the incident.[3]

Recommendation #3: Employers should consider using personal mobile radios to communicate with workers in remote worksites.

Discussion: A reliable system for promptly communicating messages to and from individuals working in remote worksites can provide a safer work environment. Office staff could use radios to locate field workers for urgent messages, and the field workers could quickly summon assistance if an emergency occurred at their worksite. In this incident, the sod farm did not have a communication system for transferring messages between the office and field workers. Therefore, when a customer requested assistance, the office manager decided to load the sod instead of waiting for the field workers to return or going to the field to deliver the message. Although the farm truck was equipped with a mobile phone, it was not immediately available to the workers who were located in the sod fields. This incident might have been prevented if the office manager could contact the field workers when their assistance was needed.

Recommendation #4: Employers with workers in remote sites should ensure that employees are trained in first aid and cardiopulmonary resuscitation (CPR).

Discussion: When an injury-producing incident occurs at a worksite in a remote area, the response of victim's co-workers may be the critical element in reducing the consequences of the injury. Although first aid and/or CPR may not have affected the outcome of this case, the lack of pertinent training may result in detrimental consequences in the event of any future job-related injuries. First aid and CPR training should be conducted using the conventional methods of training such as lecture, demonstration, practical exercise and examination (both written and practical). Training courses with these components are available to individuals and employers in most communities.

Recommendation #5: In addition, employers of workers who are not fluent in English should ensure that all workers receive instructions on safe work practices in a manner that is clear, complete, and understandable to the employee.

Discussion: Employees who are placed in situations that may present hazards to their health and safety need information and resources on recognition and avoidance of dangerous conditions. If the worker is not fluent in written and/or spoken English, the employer must ensure that the information is presented in another manner that is easily understood. This could be done by using verbal and written translations, audiovisual recordings in the worker's primary language, and/or bilingual signs. In this case, the field workers spoke Spanish as a primary language. During the investigation, it was learned that the field workers had not received formal training in forklift safety, and the company did not have training materials for Spanish-speaking individuals. The FACE investigator provided information on bilingual written and video training for forklift operation. Companies could ensure that speakers of foreign-languages receive clear and complete safety instructions by using the resources available from literacy councils, workplace literacy programs offered by schools and colleges, and community social service organizations.

REFERENCES

[1]Code of Federal Register, Vol. 60, No 49, March 14, 1995. Occupational Safety and Health Administration, Proposed Rule for Powered Industrial Truck Operator Training.

[2]Wiscosnsin Rural Health Research Center, A Guide to Tractor Roll Bars and Other Rollover Protective Structures, October, 1990.

[3]ASME/ANSI B56.1a-1995 Addenda to ASME B56.1-1993 Safety Standard for Low Lift and High Lift Trucks, American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, NY 10017.